

IN THE CLAIMS:

- 5 1. A computer system, comprising:
- a first storage device that stores a current value of a semaphore, the semaphore
 representing a shared resource accessed by a plurality of devices;
- a first detection circuit that determines the semaphore is available when a
predefined value is stored in the first storage device;
- 10 a second detection circuit that determines a device is seeking to make the
 semaphore available when the predefined value is written into the first storage device;
 and
- a first selection circuit, coupled to the first storage device, that enables a
requested value to be written into the semaphore when the first detection circuit
15 determines that the semaphore is available or when the second detection circuit
 determines that a device is seeking to make the semaphore available.
2. The apparatus of claim 1, comprising:
- a second storage device that stores a previous value of the semaphore;
- 20 a second selection circuit, coupled to the second storage device, that stores a
 value of the semaphore into the second storage device when the second detection
 circuit indicates that a device is making the semaphore available.
3. The apparatus of claim 1, comprising:
- 25 a first control unit that receives requests from the devices to access the
 semaphore and that serializes the requests for service.
4. The apparatus of claim 1, comprising:
- a third selection circuit that obtains the current and previous values of the
30 semaphore.
5. A method for operating a computer system, the method comprising the steps
of:
- providing a semaphore that is shared by a plurality of devices, the semaphore
35 associated with a current value and a previous value;
- initiating a first request, by a first device, to write a first value into the

semaphore;

writing the first value into the semaphore when the semaphore is available or when the first device is seeking to make the semaphore available;

5 initiating a second request, by the first device, to read the current value of the semaphore; and

determining that the device obtained the semaphore when the first value is the same as the current value of the semaphore.

10 6. The method of claim 5,
the determining step comprising the steps of:

providing a first logic unit having a capability to obtain the current and previous values of the semaphore without accessing the semaphore; and

obtaining the current value of the semaphore from the first logic unit.

15 7. The method of claim 5,
the writing step comprising the steps of:

reading the current value of the semaphore; and

20 determining that the semaphore is available when a predetermined value is read as the current value of the semaphore.

8. The method of claim 5,
the writing step comprising the steps of:

25 comparing the first value with a predetermined value indicating that the semaphore is available; and

determining that the first request is seeking to make the semaphore available when the first value matches the predetermined value.

30 9. The method of claim 5, comprising the step of storing a previous value of the semaphore when a device is seeking to make the semaphore available.